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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,018	06/13/2004	Hong-Da LIU	DISP0002USA	4017
27765	7590	10/03/2006	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			MOON, SEOKYUN	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/710,018	LIU, HONG-DA	
	<b>Examiner</b>	<b>Art Unit</b>	
	Seokyun Moon	2629	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/1/04&amp;5/29/06</u> .                                      | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' claim for the benefit of a prior-filed application under 35 U.S.C. 119(a)-(d) is acknowledged.

### *Information Disclosure Statement*

2. The information disclosure statements (IDS) received on September 01, 2004 and May 29, 2006 have been acknowledged and considered by the Examiner. Initial copies of form PTO-1449 are included in this correspondence.

### *Claim Objections*

3. **Claims 13 and 14** are objected to because of the following informalities: The term, "*pervious*" is an adjective used to describe a characteristic of "*light region*" in the claims. However, inserting a preposition between terms "*pervious*" and "*light region*" prevents the characteristic "*perviousness*" to be used to specify one of the characteristics of "*light region*", in the claims. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claim 1, 3, 5-8, 10, 12-14, 17, 22, and 25** are rejected under 35 U.S.C. 102(e) as being anticipated by Chuang (US Pub. No. 2004/0080687 A1).

As to **claim 1**, Chuang [fig. 1] teaches a dual-display flat display device ("*dual-display liquid crystal display*") [abstract line 1] having a first side (the area disposed in the upper portion of the display relative to the "*liquid crystal layer 160*") and a second side (the area disposed in the lower portion of the display relative to the "*liquid crystal layer 160*") opposite to first side comprising:

a first light module ("*light source 200*") for generating light beams [par. (0023) lines 3-4];

and

a display panel having a transfective structure (a combination of "*reflective electrode pattern 120*", "*transparent electrode pattern 125*", and "*transparent insulation layer 110*") therein, wherein portions of the light beams ("*reflective light 201*") are reflected by the transfective structure for displaying a first image on the first side of the dual-display flat display device, and portions of the light beams ("*transmissive light 202*") pass through the transfective structure for displaying a second image on the second side of the dual-display flat display device [par. (0025) and par. (0026) lines 1-6].

As to **claim 3**, Chuang [fig. 1] teaches the display panel to comprise a first substrate ("*first substrate 100*"), a second substrate ("*second substrate 190*") positioned between the first substrate and the first light module ("*light source 200*"), and a liquid crystal layer ("*liquid crystal layer 160*") positioned between the first substrate and the second substrate.

As to **claim 5**, Chuang [fig. 1] teaches the transfective structure (a combination of "*reflective electrode pattern 120*", "*transparent electrode pattern 125*", and "*transparent*")

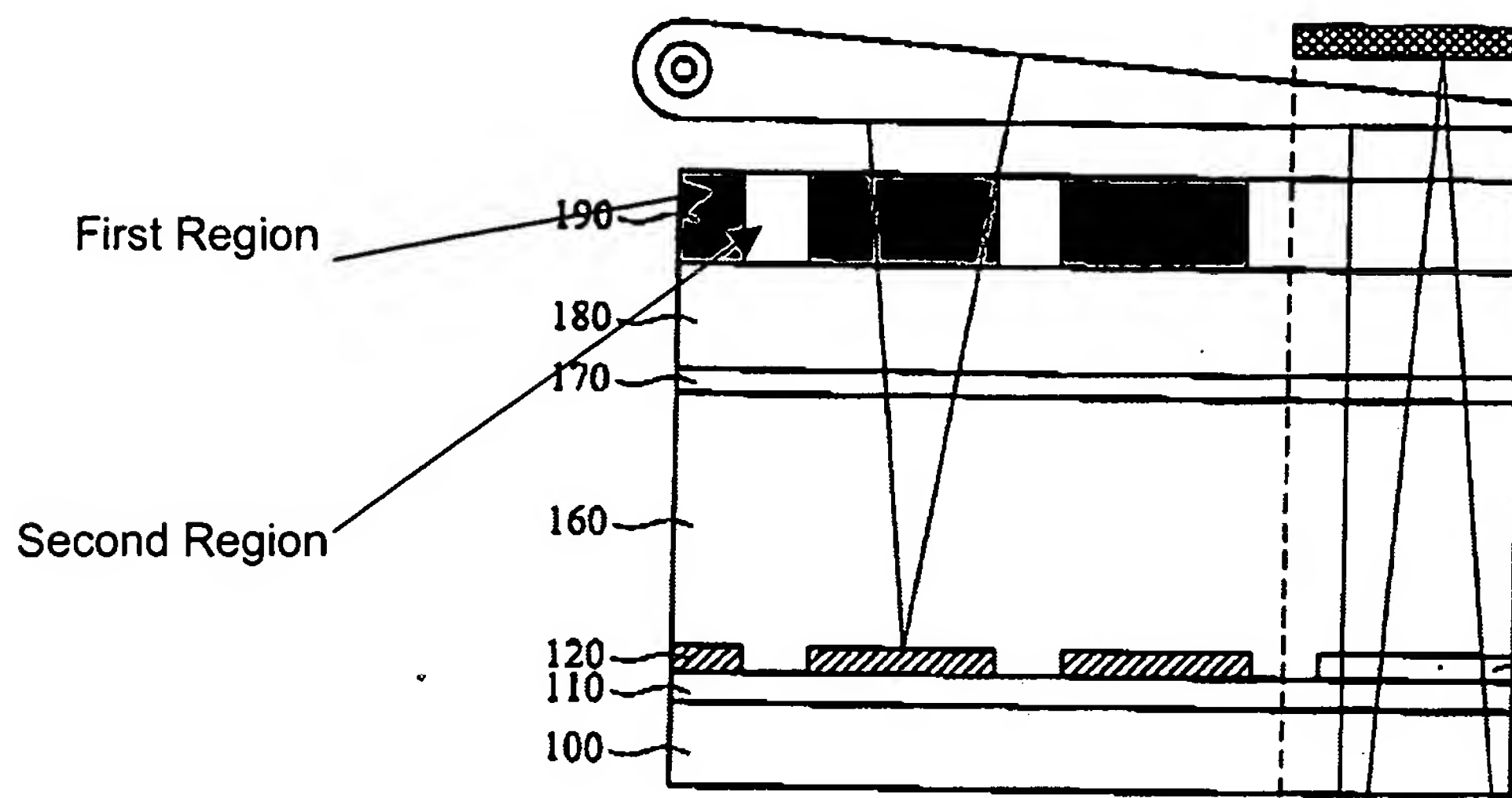
*insulation layer 110*) to be positioned between the first substrate (*first substrate 100*) and the liquid crystal layer (*liquid crystal layer 160*) and to comprise a plurality of transflective regions.

As to **claim 6**, Chuang [fig. 1] teaches the transflective structure (a combination of *reflective electrode pattern 120*, *transparent electrode pattern 125*, and *transparent insulation layer 110*) to comprise a plurality of reflective regions (*reflective electrode pattern 120*) and a plurality of transmissive regions (the area located between each of plural *reflective electrode pattern 120*).

As to **claim 7**, Chuang [fig. 1] teaches each of the reflective regions (*reflective electrode pattern 120*) to be a reflector (*reflective electrode*) comprising a planar surface or an uneven surface.

As to **claim 8**, Chuang [fig. 1] teaches the second substrate (*second substrate 190*) being a color filter [par. (0019)].

As to **claim 10**, Chuang [fig. 1] teaches the color filter (*color filter*) disposed in the *second substrate 190*) is a dual (a dual filter allowing lights to pass through the filter in both directions of upward and downward, as shown in fig. 1) color filter having a plurality of first regions respectively corresponding to the reflective regions of the transflective structure, and a plurality of second regions respectively corresponding to the transmissive regions of the transflective structure [drawing 1 provided below, which is equivalent to Chuang's fig. 1].



Drawing 1

As to **claim 12**, Chuang [Drawing. 1] teaches a thickness of each first region to be the same as a thickness of each second region.

As to **claims 13 and 14**, Chuang teaches each of the first regions and the second regions to comprise at least a pervious light region (the "*reflective light 201*" and the "*transmissive light 202*" pass through the color filter as shown on fig. 1].

As to **claim 17**, Chuang [fig. 1] teaches the first light module ("*light source 200*") to comprise a light source for generating light beams and a light-guiding plate ("*light guiding panel*") for guiding the light beams generated by the light source [par. (0023) lines 3-4].

Chuang inherently teaches a switching element for controlling brightness (whether the brightness of the light source is at maximum level or at a minimum level) of the light source included in the first light module since it is required for Chuang to turn off the light source when the display is not used in order to prevent overheating on the light source, thus to prevent the display from burnout.

As to **claim 22**, Chuang inherently teaches a memory for storing image data that are read out to display the first image and the second image since it is not possible for Chuang's device to display images without a memory storing the images.

As to **claim 25**, Chuang teaches the display panel to comprise a liquid crystal display panel, an electrophoresis display panel, or an active matrix light-emitting diode display panel.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 2, 4, 23, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang.

As to **claim 2**, Chuang teaches a light module ("*light source 200*") for generating light beams to pass through the transfective structure (a combination of "*reflective electrode pattern 120*", "*transparent electrode pattern 125*", and "*transparent insulation layer 110*") for displaying the second image on the second side (the area disposed in the lower portion of the display relative to the "*liquid crystal layer 160*") of the dual-display flat display device.

Chuang does not teach a second light module for generating light beams to pass through the transfective structure for displaying the first image on the first side of the dual-display flat display device.

However, the courts have held that a mere duplication of the components of the device is generally recognized as being within the level of ordinary skill in the art. St. Regis Paper Co. v. Bemis Co. Inc. 193 USPQ 8, 11 (7<sup>TH</sup> Cir. 1977).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a second light source on the second side of Chuang's dual-display flat display device in order to strengthen the intensity of the emitted light, thus to display images with higher brightness.

As to **claim 4**, Chuang [fig. 1] teaches the transflective structure (a combination of "*reflective electrode pattern 120*", "*transparent electrode pattern 125*", and "*transparent insulation layer 110*") to be positioned between the first substrate ("*first substrate 100*") and the liquid crystal layer ("*liquid crystal layer 160*").

Chuang does not expressly disclose the first substrate to be positioned between the transflective structure and the liquid crystal layer.

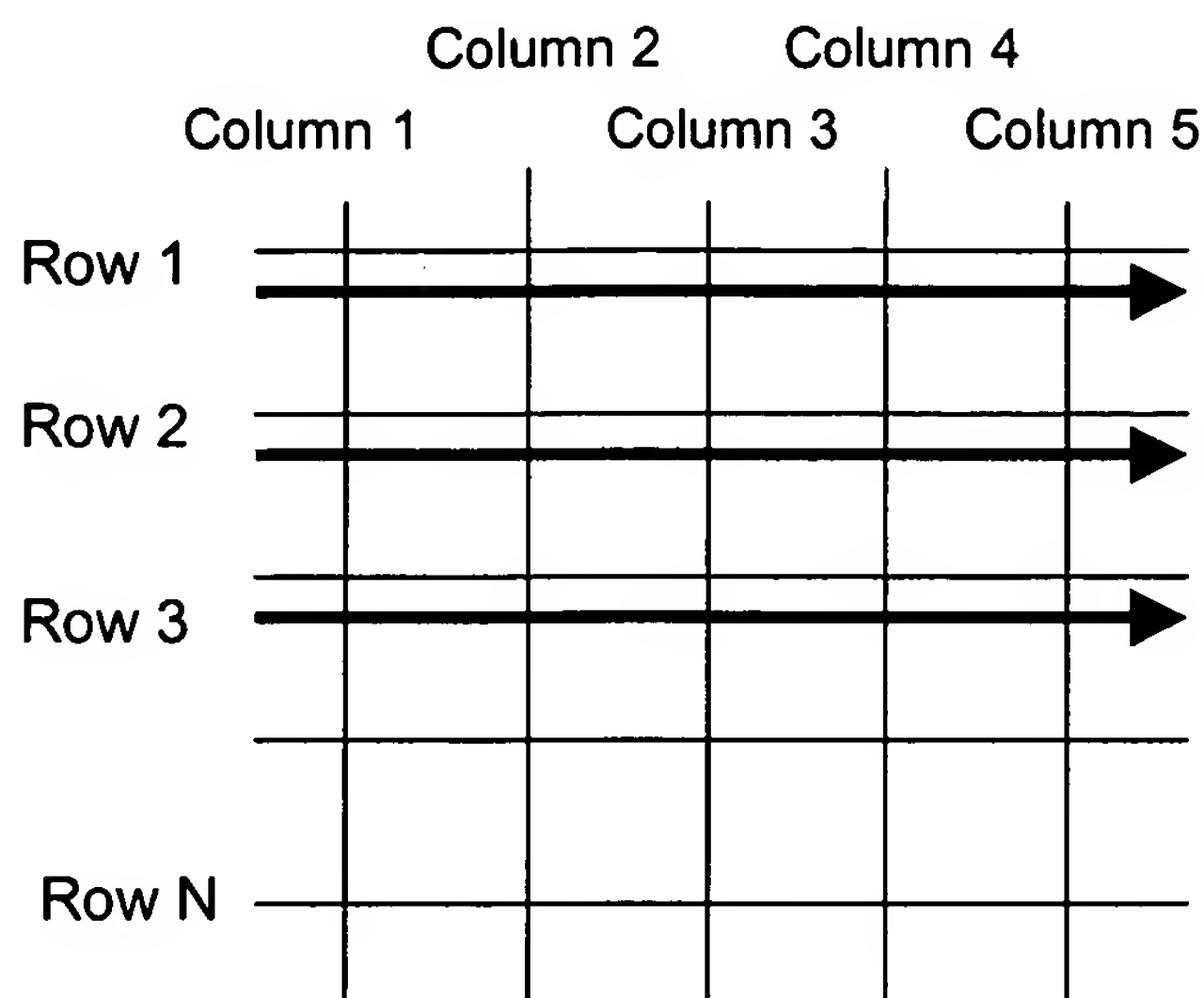
However, as Examiner acknowledges that arranging the first substrate between the transflective structure and the liquid crystal layer is not a required design layout of the components for the invention, but is one layout out of many alternative design layouts, it is an obvious matter of design choice to have such an arrangement of the first substrate, the transflective structure, and the liquid crystal layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to place the transflective structure between the liquid crystal layer and the first substrate or to place the liquid crystal layer between the transflective structure and the first substrate, since either one of the arrangements would perform equally well at transmitting and reflecting light beams generated from the light module to two sides of the display.

As to **claims 23 and 24**, Chuang does not expressly disclose the image data to be read out to display the first image and the second image by dividing the image data and determining a starting position of the divided image data.

However, Examiner takes official notice that it is well known in the art to divide an image to be displayed and to determine a starting position of the divided image in a display device.

Please refer to drawing 2 for illustration.



Drawing 2

In a conventional electronic display device such as a liquid crystal display, a plasma display, or an electro-luminescence display, an image is displayed on the screen of the display by dividing an image into plural portions (image data to be displayed by "Row 1", image data to be displayed by "Row 2", image data to be displayed by "Row 3", ..., and image data to be displayed by "Row N") and by driving each portion in a specific sequence (from "Column 1" to "Column 5"). In this example, the starting position of each portion is the intersection point of each row with "Column 1".

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to specify Chuang's image data to be read out to display the images by dividing the images and determining a starting position of the divided images, in order to simplify the driving circuitry of Chuang's display device by driving each portion of the display in a predetermined sequence instead of driving each portion of the display randomly.

8. **Claims 9 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang in view of Liao (US Pub. No. 2004/0095527 A1).

As to **claim 9**, Chuang does not expressly disclose the color filter to be a light-condensing color filter.

However, Liao [fig. 5A] teaches a color filter implemented in a liquid crystal display, which is a micro lens (which is used for light condensing) [par. (0030) lines 11-12].

It would have been obvious to one of ordinary skill in the art at the time of the invention to specify Chuang's color filter to be micro lens, as taught by Liao, since it is well known in the art to use micro lens in a liquid crystal display in order to provide high intensity image on a display by focusing lights into a screen with micro lens.

As to **claim 11**, Chuang does not disclose a thickness of each first region being smaller than a thickness of each second region.

However, as Examiner acknowledges that having the thickness of each first region to be smaller than the thickness of each second region is not a required design layout of the components for the invention, but is one layout out of many alternative design layouts, it is an obvious matter of design choice to have such a dimension for each first region and each second region.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to specify the thickness of each first region to be same as or smaller than the thickness of each second region since either one of the dimensions for each first and second region would perform equally well at condensing lights.

9. **Claims 15 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang in view of Oh et al. (US Pat. No. 5,844,644, herein after referred to as "Oh").

As to **claim 15**, Chuang does not disclose a light-condensing structure being positioned on the second substrate for condensing portions of the light beams generated by the first light module.

However, Oh [fig. 3] teaches a light-condensing structure ("*overcoat layer 125*") positioned on a second substrate ("*color filter layer 123*") for condensing portions of the light beams generated by a first light module to a transmissive regions ("*light transmissive portion*") of a transflective structure ("*first transparent substrate 110*") [col. 3 lines 25-33].

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a light-condensing structure on Chuang's second substrate, as taught by Oh, in order to focus the incident light transmitted by the light module onto the transmissive region of a transflective structure [col. 3 lines 38-45], thus to improve the light-transmittance of the display [col. 1 lines 9-10].

As to **claim 16**, Chuang modified by Oh [Oh: fig. 3] teaches the light-condensing structure ("*overcoat layer 125*") to comprise a plurality of micro lenses [Oh: col. 1 lines 9-10].

10. **Claims 18-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang in view of Satoh et al. (US Pub. No. 2005/0177978 A1, herein after referred to as "Satoh").

As to **claim 18**, Chuang does not expressly disclose the first image and the second image to be displayed asynchronously on the first side and the second side.

However, Satoh [figs. 1, 3, and 17] teaches a method of showing a first image ("*ST807*") and a second image ("*ST804*") asynchronously on a first side ("*first displaying portion 114*") and a second side ("*second displaying portion 115*") of a mobile phone.

It would have been obvious to one of ordinary skill in the art at the time of the invention to specify Chuang's display device to display the first image and the second image asynchronously as the display device is used for a folding type mobile phone [Chuang: par. (0005)], as taught by Satoh, in order to provide different images for each of the two displays according to the folding state of the mobile phone including the display device.

As to **claim 19**, Chuang does not expressly disclose the first image being an mirror image of the second image.

However, Satoh [figs. 1 and 3] teaches a first image (the image displayed on "*first displaying portion 114*") being a mirror image of a second image (the image displayed on "*second displaying portion 115*") [par. (0088) and par. (0109) lines 13-16].

It would have been obvious to one of ordinary skill in the art at the time of the invention to specify Chuang's first image to be a mirror image of the second image, as taught by Satoh, in order to allow to display an image on both sides of the mobile phone.

As to **claims 20 and 21**, Chuang modified by Satoh does not expressly disclose the first image being different from the second image and being a scale-down image.

However, as Examiner acknowledges that specifying the first image to be different from the second image and to be a scaled-down image is not a required characteristic of the device, but is one feature out of many alternative features that can be implemented on the device, it is an obvious design choice to specify the characteristics of the first images in such ways.

Furthermore, since the Applicants disclose that specifying the first image to be different from the second image is one of many alternative options provided in the display device [Appl. spec. par. (0039) lines 10-16], it would have been obvious to one of ordinary skill in the art at the time of the invention to specify Chuang's first image to be one of a mirror image of the second image, an image different from the second image, and a scaled-down image of the second image.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 25, 2006

S.M.



SUMATI LEFKOWITZ  
SUPERVISORY PATENT EXAMINER

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